

What is claimed is:

1. A sample fabricating apparatus for forming a sample section in a sample by ion beam processing, comprising:
  - an ion beam optical system including an ion source, a lens for condensing ions emitted from the ion source, and a deflector,
  - an ion beam optical system controller for controlling the ion beam optical system,
  - a detector for detecting secondary particles generated from a sample irradiated with an ion beam,
  - a specimen-stage for holding the sample, and
  - a specimen-stage position controller for controlling the position of the specimen stage, in which an angle formed between the optical axis of the ion beam emitted from the ion beam optical system and the sample surface is fixed, and formation of a sample section is controlled in correspondence with a set-section depression angle.
  
2. A sample fabricating apparatus for forming a sample section in a sample by ion beam processing, comprising:
  - an ion beam optical system including an ion source, a lens for condensing ions emitted from the ion source, and a deflector,
  - an ion beam optical system controller for controlling the ion beam optical system,
  - a detector for detecting secondary particles generated from a sample irradiated with an ion beam,
  - a specimen stage for holding the sample, and
  - a specimen-stage position controller for controlling the position of the specimen stage, in which the ion beam optical system controller has a construction that an angle formed between the optical axis of the ion beam emitted from the ion beam optical system and the sample surface is larger than 0 degree and smaller than 90 degrees, and controls an ion beam scan by the deflector in correspondence with a set -section depression angle of a set-section.

3. A sample fabricating apparatus according to claim 1, wherein  
said ion beam optical system controller controls the deflector on the basis of angle information that a requested depression angle is projected to a plane including, as a normal line, the optical axis of the ion beam in correspondence with a set-section depression angle of a set section.
4. A sample fabricating apparatus according to claim 1, wherein  
said ion beam optical system controller controls the deflector on the basis of angle information that a set-section depression angle is projected to a plane including, as a normal line, the optical axis of the ion beam in correspondence with a set-section depression angle of a set-section, and the specimen stage position controller controls turning in the specimen stage plane of the specimen stage.
5. A sample fabricating apparatus according to claim 1, further comprising:  
a display that displays said angle information that a set-section depression angle of a set-section is projected to a plane including the optical axis of the ion beam as a normal line.
6. A sample fabricating apparatus according to claim 1, wherein,  
said ion beam optical system controller controls the deflector, and said specimen stage position controller controls the specimen-stage in correspondence with parameters of coordinates of a requested-section edge, a requested-section normal line direction, and a size, parameters equivalent to the parameters, or a combination of those parameters.
7. A sample fabricating apparatus according to claim 1, further comprising:  
An input apparatus for setting a requested-section depression angle of a requested section or a parameter equivalent to the requested-section depression angle is provided.

8. A sample fabricating method for irradiating a sample with an ion beam from an oblique direction to prepare a section by sputtering, comprising:
  - a step of setting a depression angle of a section requested to be observed in a sample,
  - a step of determining a scanning-area edge of an ion beam in corresponding to the depression angle and setting a scanning area, and a step of processing the scanning area with the ion beam.
9. A sample fabricating method according to claim 8, further comprising:
  - a step of obtaining a turn angle of the requested section and a step of determining a turn angle of the sample in correspondence with the depression angle and the turn angle of the requested section, and setting turn in the specimen stage plane of the specimen stage.